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よみがえる、川

川の自然再生で築く持続可能な社会

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川は、私たちや将来世代の人々にも多くのめぐみをもたらし続けてくれる、豊かな暮らしの基盤です。しかし人による地球温暖化による影響と、生物多様性を失ってきました。川は今、「環境」「治水」「利水」の時代を迎えています。

Rivers are part of the foundation of our good life because they give us and future generation a variety of natural benefits. Unfortunately, we are now witnessing the impacts of global warming and deterioration of river biodiversity. Japanese rivers are facing a new era of concern beyond 'Flood Control' and 'Water Use'. The newest concern is 'Environment'.

Reviving Rivers

Support to a Sustainable Society

Rivers are indispensable to our daily lives. But Japan's rivers have been altered completely especially during the country's rapid economic growth era. River continuity has been broken by dams and weirs and their channels have been straightened and fixed by concrete levees. Thanks to those concrete levees small scale typhoons could not cause floods, people have expanded their community development to the edge of the levees. As a result, once a major flood occurs along many rivers in Japan, damage can be tremendous. Moreover, dams and levees are aging and sooner or later the time when they become useless will come. There is another serious issue. As Japanese population steadily decreases, tax revenues will surely be reduced and it will become more difficult to maintain those larger structures.

Japan's 'River Act' used to contain two major objectives: flood control and water use. In 1997, the law was revised by adding a new objective, 'environmental conservation', to protect and restore riverine nature. Twenty years have passed since then and times have changed. As rivers are restored, it is important to restore river characteristics such as 'variability', 'diversity' and 'continuity'. Also, we should consider a whole watershed as one riverine ecosystem, not just a river itself. Upland forests, wetlands, tidelands, all these systems and environments are elements of riverine ecosystems. But we cannot say this concept has been sufficiently incorporated and adopted.

But there are a few good examples in both Japan and Germany. In the Kushiro Shitsugen wetland (Ramsar site in Hokkaido, Japan, a portion of the upper reach of the Kushiro River was converted from its straightened canal to a meandering channel. As a result,

environment along the river has become more complex and the diversity of fish and insects have increased. Additionally, wetland vegetation along its lower reaches has become more diverse. In another Ramsar site in Hokkaido (called Shiretoko Peninsula), a project to improve river environment for salmon to return upstream to spawn has been implemented by changing the structure of the dam and by adding other improvements.

In Germany, extensively developed old river transportation systems have been slowly declining because modern transportation has been replacing them. As many areas along the rivers have lost river transportation industries, Germany's federal government has started what they call the 'Blaues Band (Blue Belt)' policy to promote restoration of natural river environments. For example, along the Havel River, 1.8 km of levee were removed and 16 areas of floodplains and 2.6 ha of riparian forest were created. Also, with a belief that 'levees cannot prevent floods', the government has established a new policy called 'the National Flood Control Program' which promotes setting levees farther away from river channels to secure enough space for large floodplains. Along the midstream of the River Elbe, the government bought farmlands, set back levees, cut out and removed portions of the old levee, and restored 420 ha of floodplains.

By recovering natural functions and promoting restoration of nature throughout a whole Watershed, we can make ecological networks healthier. As a result, we will be able to receive more benefits of ecological services. Also, as many different stake-holders in the Watershed participate in the projects, relationships among citizens will be enhanced, and communities may be revitalized. We can also expect creation

of new businesses and employment by using nature as tourism resources. By restoring natural rivers, we can create a large flow of sustainable society.

In the past, river management policies emphasized flood control and use of water, but recently, we are witnessing adverse impacts of global warming and deterioration in biodiversity in the riparian ecosystems. Our policy of river management must integrate 'Environment', 'Flood Control' and 'Water Use' in a new era of sustainability.



AS flood control measures changed river structure, people moved to the edge of levees. As a result, risk of and damage from floods have both increased.



Many fish that swim up rivers are caught by upland animals and enter into nutrient cycles on the land. We should understand each whole river basin as one ecosystem.



In Japan, we should promote restoration of natural rivers as part of foundation of a sustainable society.